Claims

1 1.   A method comprising

2   receiving an electronic document represented by serial data that contains content

3 of the document and defines an order in which respective portions of the content are to be

4 performed,

5   analyzing the serial data of the electronic document, and

6   generating reorganization information for use in delivering the portions of the

7 content, the reorganization information enabling performance in an order different from

8 the order defined by the serial data.

1 2.   The method of claim 1 in which the serial data representing the electronic

2 document is expressed in a markup language.

1 3.   The method of claim 2 in which the mark-up language comprises a hypertext

2 markup language.

1 4.   The method of claim 2 in which the serial data representing the electronic

2 document is expressed in an electronic mail format.

1 5.   The method of claim 4 in which the electronic mail format includes a header and

2 a main body.

1 6.   The method of claim 4 in which the analyzing includes determining the start of

2 the main body.

1 7.   The method of claim 3 in which the hypertext markup language comprises

2 HTML.

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1   8.   The method of claim 3 in which the markup language comprises PDF, postscript,

2   SGML, Powerpoint, rich text, or unformatted text.

1   9.   The method of claim 1 in which the content of the document includes at least one

2   of the following: text, images, tables, frames, and headings.

1   10.   The method of claim 1 in which the order in which the respective portions of the

2   content are to be performed includes a two-dimensional layout.

1   11   The method of claim 1 in which the reorganization information includes an

2   identification of a relative importance of the respective portions of the content.

1   12   The method of claim 11 in which the reorganization information includes an

2   identification of a main block of text.

1   13.   The method of claim 12 in which the analyzing includes finding an annotation

2   inserted in the electronic document as a marker of the location of the main block of text.

1   14.   The method of claim 1 in which the reorganization information associates with

2   each of the portions of the content a revised order for presentation.

1   15.   The method of claim 1 in which the reorganization information includes a

2   hyperlink to be displayed near the beginning of the document, the hyperlink pointing to a

3   portion of the content that appears later in the original order.

1   16.   The method of claim 15 in which the hyperlink is included only if the location of

2   the hyperlink in the document is separated by at least a predetermined distance from the

3   location to which it points.

1   17.   The method of claim 1 in which the reorganization information causes an

2   automatic redirection from the first portion of the content to a later portion of the content

3   when the document is opened for performance.

1   18.   The method of claim 1 in which performance of the portions of the content

2   comprises presenting the portions on a display for viewing.

1   19.   The method of claim 18 in which the different order of performance enabled by

2   the reorganization information is adapted for a display that has a more restricted

3   performance capability than does the performance capability of the display for which the

4   document was originally designed.

1   20.   The method of claim 19 in which the more restricted display is part of a mobile

2   phone or personal digital assistant, and the display for which the document was originally

3   designed comprises a desktop computer monitor.

1   21.   The method of claim 1 in which performance of the portions of the content

2   comprises presenting the portions by speech synthesis.

1   22.   The method of claim 1 in which analyzing includes identifying one of the portions

2   as containing central content of the document.

1   23.   The method of claim 22 in which generating includes inserting a link from near

2   the beginning of the first portion of the content to the beginning of the central content

3   portion.

1   24.   The method of claim 22 in which generating includes moving the central content

2   portion to near the beginning of the document.

1   25.   The method of claim 22 in which generating includes altering the document so

2   that the central content portion appears first when the document is performed.

1   26.   The method of claim 1 in which analyzing includes identifying portions of the

2   document that should not be separated in generating the reorganization information.

1   27.   The method of claim 26 in which the portions that should not be separated include

2   at least one of the following pairs: heading and text, image and caption, or paragraph and

3   related paragraph.

1   28.   The method of claim 1 in which analyzing includes identifying portions of the

2   document that should not be moved relative to other portions of the document.

1   29.   The method of claim 1 in which analyzing includes identifying portions of the

2   document that should be moved relative to other portions in generating the reorganization

3   information.

1   30.   The method of claim 29 in which the portions that should be moved comprise

2   images or tables.

1   31.   The method of claim 1 in which analyzing includes identifying regions according

2   to functions.

1   32.   The method of claim 31 in which the functions include navigation and content.

1   33.   The method of claim 1 in which the analyzing includes converting the document

2   to a tree format.

1   34.   The method of claim 1 in which the analyzing includes blocking major regions of

2   the document.

1   35.   The method of claim 1 in which the analyzing includes counting characters of

2   text.

1   36.   A method comprising

2   at a server, receiving a request from a remote device for a portion of a document

3   represented by serial data that contains content of the document and defines an order in

4   which respective portions of the content are to be performed,

5   in response to the request, returning at least one and fewer than all of the portions

6   of the content using reorganization information that enables performance of the portions

7   in an order different from the order defined by the serial data.

1   37.   The method of claim 36 also including

2   receiving other requests for portions of the content of the document different

3   portions, and

4   in response to the requests, returning other portions of the content using the

5   reorganization information.

1   38.   A data structure stored on a medium and capable of configuring a machine to

2   respond to requests for portions of a document that is represented by serial data that

3   contains content of the document and defines an order in which respective portions of the

4   content are to be performed, the data structure comprising reorganization information that

5   enables performance of the portions in an order different from the order defined by the

6   serial data.

1   39.   The data structure of claim 38 also including the content, the data being expressed

2   as a modified version of an original data structure that expressed the document.

1   40.   The data structure of claim 39 in which the modified version includes annotations.

1   41.   Apparatus comprising

2   means for receiving an electronic document represented by serial data that

3   contains content of the document and defines an order in which respective portions of the

4   content are to be performed,

5   means for analyzing the serial data of the electronic document, and

6   means for generating reorganization information for use in delivering the portions

7 of the content, the reorganization information enabling performance in an order different

8 from the order defined by the serial data.

1 42. Apparatus comprising

2   a machine configured to receive an electronic document represented by serial data

3 that contains content of the document and defines an order in which respective portions

4 of the content are to be performed, analyze the serial data of the electronic document, and

5 generate reorganization information for use in delivering the portions of the content, the

6 reorganization information enabling performance in an order different from the order

7 defined by the serial data.